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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,207	03/16/2004	Bey-Dih Chang	SEN-001US3	3124

7590 01/07/2009

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EXAMINER	
MARVICH, MARIA	

ART UNIT	PAPER NUMBER
1633	

MAIL DATE	DELIVERY MODE
01/07/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/801,207	CHANG ET AL.	
	Examiner	Art Unit	
	MARIA B. MARVICH	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6-8,26,27 and 29-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-8, 26, 27 and 29-31* _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/16/04* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to an amendment filed 9/24/08. Claims 1, 6-8, 26, 27 and 29-31 are pending.

Claim Objections

Claims 1 and 26 are objected to because of the following informalities: upon reconsideration, the following amendments are proposed to provide clarity and accuracy to the claims. First, the preambles of both 1 and 26 should be amended to --A method for identifying an inhibitor (promoter) of p21 mediated induction-- . As opposed to a method of identifying compounds that inhibit or promote p21 induced senescence as recitation that the compounds are identified as inhibitors or promoters does not encompass the screening aspect of the claims. Not all compounds will act as inhibitors or promoters rather, those that do are identified.

Secondly, the clarity of the claims suffers by combining the treatment of the cell "in the presence and absence of the compound" as each requires non-overlapping steps. It would be remedial to amend the claims to recite in step a) --treating the mammalian cell in the presence of a test compound-- and --culturing the mammalian cell in the presence of the test compound--. Secondly, insert a step of --treating the mammalian cell in the absence of a test compound-- and --culturing the mammalian cell in the absence of the test compound--. Step b) will entail --assaying the mammalian cell in the presence of test compound following induction of p21 expression and in the absence of test compound following induction of p21 expression--.

Step c) in claim 26 is preferable if recited as in claim 1 --identifying the compound s a promoter of p21 mediated induction or repression --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 26 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **This is a new rejection necessitated by applicants' amendment.**

Claim 1 and 26 are vague and indefinite in that the methods and bounds of "expression of a cellular gene by p21 expression" and "the gene induced or repressed by p21" are unclear. The claim appears to require that the assayed genes that are assayed must be induced or repressed by p231. However, the claims lack a step that would allow a person of skill in the art to know that the gene expression they are assaying has been induced or repressed by p21. Once the cellular genes are assayed, it is not possible to know how or what induced or repressed the expression.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, 8, 26, 27, 29 and 31 stand rejected under 35 U.S.C. 102(e) as being anticipated by Fisher and Jiang (US 6,051,376; see entire document). **This rejection is maintained for reasons of record in the office action mailed 1/11/07 and 7/26/07 and 3/20/08 and restated below.**

Fisher and Jiang propose methods of identifying inhibitors of senescence (see e.g. col 17, line 45-50). The methods involve culturing a plurality of cells with a compound and assaying for expression of MDA7 as a marker. Method of assaying includes using immunological agents and hybridization (see e.g. figure 4 and col 58, line 28-64). MDA7 it is taught is induced by induction of senescence (see e.g. col 98, line 8-30), which is also associated with induction of p21 or mda6 (col 109, line 25-38). Identification of an inhibitor of MDA7, through identification of muted MDA7 expression, results in identification of inhibitors of p21 and senescence inherently. As well, applicants teach that Fibronectin is assayed following induction of senescence (conditions of IFNβ and MEZ).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 6, 8, 26, 27 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher and Jiang (US 6,051,376; see entire document) in view of Beug et al

(US 6,383,733; see entire document). **This rejection is maintained for reasons of record in the office action mailed 3/20/08 and restated below.**

Applicants claim a method of identifying inhibitors of senescence by assaying for activity of a cellular gene product.

The teachings of Fisher and Jiang are described above and are applied as before except;

Fisher and Jiang do not teach that the assay uses a measure of gene product activity.

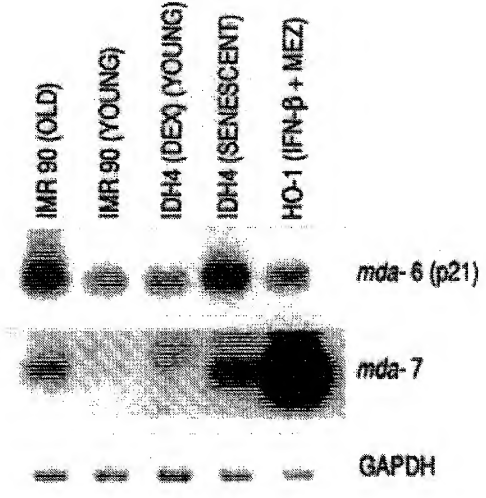
Beug et al teach culturing of a mammalian cell comprising a reporter gene fused to the plasminogen activator inhibitor promoter to induce senescence. Reporter gene expression was detected by assaying activity of the cellular gene product.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to assay for inhibitors of senescence as in the methods of Fisher and Jiang using the assay of gene activity as taught by Beug et al because Fisher and Jiang teach that it is within the ordinary skill of the art to induce senescence and assay for induction of gene expression of senescence related genes and then to identify inhibitors of senescence and because Beug et al teach that it is within the ordinary skill of the art to assay activity of a cellular product as an indication of a cellular event. One would have been motivated to do so in order to receive the expected benefit of ease of detection using reporter gene assays in which gene function is assayed. As well, it would have been of the ordinary skill in the art to substitute one known method for another given that both methods are well known in the art. Based upon the teachings of the cited references, the high skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

Response to Argument

Applicants traverse the claim rejections under 35 U.S.C. 102 and 103 on pages of the amendment filed 9/24/08. Fischer teaches methods of inducing senescence as depicted below in figure 43. Specifically, conditions of culturing IMR for a long period of time, removal of dexamethasone both lead to senescent cells. Coordinately with induction of senescence is the increase in p21 expression (induction of p21). Mda-7 is used a marker for onset of senescence. As well, HO-1 cells in the presence of IFN-B and MEZ become terminally differentiated and growth arrested (senescent).

FIG. 43



Mda-7 was found to be a marker of senescence, expressed in terminally differentiated cells but not in actively growing cells. The specification teaches that "This invention provides a method

of determining whether a cell is senescent comprising detecting the expression of mda-7, the expression of the mda-7 gene indicating that the cell is senescent." And "This invention provides a method of identifying a compound inhibiting senescence comprising: a) incubating a plurality of cells with an appropriate amount of a compound; b) detecting the expression of mda-7, the inhibition of the expression of mda-7 indicating that the compound is inhibiting senescence." Hence, and quite clearly Fischer et al teach methods of inducing senescence (see figure 43) wherein induction of senescence is measured by p21 and mda-7 expression. Additionally, Fischer et al specifically recognize that mda-7 is it is not expressed in actively growing human cells but it is induced during cellular senescence and can be used "3) for the identification of agents capable of inducing growth suppression and various components of the differentiation process (including terminal differentiation) in human melanomas (drug screening programs to identify new differentiation-inducing and chemotherapeutic agents) (see col 98, line 41-45). Then as a measure of inhibition of senescence, mda-7 expression is monitored for effects of a test compound. Furthermore, the addition of mda-S and mda-AS were tested for induction or repression of mda-7 expression (col 75-76). Hence, contrary to applicants' arguments, Fisher et al anticipate the instant claims.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101, which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 6-8 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4-8 and 11-14 of U.S. Patent No. 6, 706,491. **This rejection is maintained for reasons of record in the office action mailed 3/20/08 and restated below.**

An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claims because the examined claim is either anticipated by, or would have been obvious over, the reference claims. Although the conflicting claims are not identical, they are not patentably distinct from each other because the cited claims of the instant invention are generic to all that is recited in claims. That is, claims 1, 2, 4-8 and 11-14 of U.S. Patent No. 6, 706,491 anticipate and fall entirely within the scope of the rejected claims of the instant application. Specifically, U.S. Patent No. 6, 706,491 and the instant claims recite a method comprising treatment of a mammalian cell such that p21 is induced (the instant claims recite that senescence is induced which is a p21 related event) and then assay for genes induced by p21 in the presence and absence of test compounds. The method of the instant claims identifies

inhibitors of senescence, which is inherent in the method of U.S. Patent No. 6, 706,491 that identifies inhibitors of p21.

Additionally, if a patent resulting from the instant claims was issued and transferred to an assignee different from the assignee holding a patent from U.S. Patent No. 6, 706,491, then two different assignees would hold a patent to the claimed invention of U.S. Patent No. 6, 706,491, and thus improperly there would be possible harassment by multiple assignees.

Claims 1 and 6-8 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 38, 40, 44, 49-52 and 55-57 of copending Application No. 10/233,032. **This rejection is maintained for reasons of record in the office action mailed 3/20/08 and restated below.**

An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claims because the examined claim is either anticipated by, or would have been obvious over, the reference claims. Although the conflicting claims are not identical, they are not patentably distinct from each other because the cited claims of the instant invention are generic to all that is recited in claims 28-37 and 58-63 of copending Application No. 10/233,032. That is, claims 28-37 and 58-63 of copending Application No. 10/233,032.anticipate and fall entirely within the scope of the rejected claims of the instant application. Specifically, copending Application No. 10/233,032 and the instant claims recite a method comprising treatment of a mammalian cell such that p21 is induced (the instant claims recite that senescence is induced which is a p21 related event) and then assay for genes induced by p21 in the presence

and absence of test compounds. The method of the instant claims identifies inhibitors of senescence, which is inherent in the method of U.S. application 10/233,032, which identifies inhibitors of p21.

Additionally, if a patent resulting from the instant claims was issued and transferred to an assignee different from the assignee holding the 10/233,032, then two different assignees would hold a patent to the claimed invention of 10/233,032, and thus improperly there would be possible harassment by multiple assignees.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1 and 6-8 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 25-30, 32, 33, 52-55, 95-101, 103-105 and 107-115 of copending Application No.09/861925. **This rejection is maintained for reasons of record in the office action mailed 3/20/08 and restated below.**

An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claims because the examined claim is either anticipated by, or would have been obvious over, the reference claims. Although the conflicting claims are not identical, they are not patentably distinct from each other because the cited claims of the instant invention are generic to all that is recited in claims. That is, claims 25-30, 32, 33, 52-58, 95-101, 103-105 and 107-115 of copending Application No.09/861925 anticipate and fall entirely within the scope of the rejected claims of the instant application. Specifically, application 09/861,925 and the instant

claims recite a method of identifying a compound that inhibits induction of genes using a cell comprising a gene induced by p21 under conditions that induce senescence. The method of the instant claims identifies inhibitors of senescence, which is inherent in the method of U.S. application 09/861925, which identifies inhibitors of p21.

Additionally, if a patent resulting from the instant claims was issued and transferred to an assignee different from the assignee holding a patent from 09/861925, then two different assignees would hold a patent to the claimed invention of 09/861925, and thus improperly there would be possible harassment by multiple assignees.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Argument

It is acknowledged that applicants' will address the provisional obviousness double patenting rejections upon indication of allowable subject matter. However, until the recited claims are patented or a terminal disclaimer is filed, the claims remain rejected.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA B. MARVICH whose telephone number is (571)272-0774. The examiner can normally be reached on M-F (7:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach, PhD can be reached on (571)-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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